

Appl. No. 10/552,236
Amdt. Dated January 28, 2008
Reply to Office Action of October 26, 2007

Amendments to the Claims:

This listing will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (Previously presented): A process for producing a UV-curable liquid polyurethane which comprises subjecting (A) a polycarbonatediol having a molecular weight of 500-5,000, (B) a trifunctional alcohol, and (C) a diisocyanate to reaction in the presence of (D) a (meth)acrylate compound represented by the general formula $\text{CH}_2=\text{CRCO}(\text{OC}_n\text{H}_{2n})_p\text{R}'$ (where R is a hydrogen atom or a methyl group, R' is a hydrogen atom, an alkoxyl group, or a phenoxy group, n is an integer of 1-12, and p is an integer of 1-5), or the general formula $\text{CH}_2=\text{CRCO}(\text{OC}_m\text{H}_{2m})_q\text{OCOCR}=\text{CH}_2$ (where R is a hydrogen atom or a methyl group, m is an integer of 2-12, and q is an integer of 1-14), and (E) a di(meth)acrylate compound of alkylene glycol whose alkylene group is substituted by a lower alkyl group having 1 to 5 carbon atoms, and by adding (F) a hydroxyl group-containing (meth)acrylate to the resulting solution of urethane oligomers in (meth)acrylate, thereby carrying out terminal (meth)acrylating reaction of the urethane oligomers.

Claim 2 (Original): A process for producing a UV-curable liquid polyurethane resin according to Claim 1, wherein the terminal (meth)acrylating reaction is carried out after adding (G) a

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photopolymerization initiator and (H) a hindered phenol-based antioxidant having a molecular weight of 500-2,000 thereto.

Claim 3 (Previously presented): A process for producing a UV-curable liquid polyurethane resin according to Claim 1, wherein after the terminal (meth)acrylating reaction of the urethane oligomers is carried out, (G) a photopolymerization initiator and (H) a hindered phenol-based antioxidant having a molecular weight of 500-2,000 are added to the reaction mixture.

Claim 4 (Canceled)

Claim 5 (Original): A process for producing a UV-curable liquid polyurethane resin according to Claim 1, wherein the trifunctional alcohol as Component (B) is trimethylolpropane or an alkylene oxide adduct thereof.

Claim 6 (Previously presented): A process for producing a UV-curable liquid polyurethane resin according to Claim 1, wherein the trifunctional alcohol as Component (B) is used in a proportion of 0.5-10 parts by weight on the basis of 100 parts by weight of the polycarbonatediol as Component (A).

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Claim 7 (Original): A process for producing a UV-curable liquid polyurethane resin according to Claim 1, wherein the diisocyanate as Component (C) is an aromatic diisocyanate.

Claim 8 (Previously presented): A process for producing a UV-curable liquid polyurethane resin according to Claim 1, wherein the diisocyanate as Component (C) is used in a proportion of 20-60 parts by weight on the basis of 100 parts by weight of the polycarbonatediol as Component (A) and in NCO/OH equivalent ratio of 1.01-2.00.

Claim 9 (Original): A process for producing a UV-curable liquid polyurethane resin according to Claim 1, wherein the (meth)acrylate compound as Component (D) is used in a proportion of 10-200 parts by weight on the basis of 100 parts by weight of the polycarbonatediol as Component (A).

Claim 10 (Original): A process for producing a UV-curable liquid polyurethane resin according to Claim 1, wherein Component (E) is 2,2-di(lower alkyl)-1,3-propanediol di(meth)acrylate.

Claim 11 (Previously presented): A process for producing a UV-curable liquid polyurethane resin according to Claim 1, wherein the diisocyanate as Component (C) is used in a proportion of 20-60 parts by weight on the basis of 100 parts by weight of the polycarbonatediol as Component (A) and in NCO/OH equivalent ratio of 1.01-2.00.

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Claim 12 (Original): A process for producing a UV-curable liquid polyurethane resin according to Claim 1, wherein the hydroxyl group-containing (meth)acrylate as Component (F) is used in NCO/OH equivalent ratio of 0.01-0.90 with respect to the terminal isocyanate groups of the resulting urethane oligomers.

Claim 13 (Previously presented) A process for producing a UV-curable liquid polyurethane resin according to Claim 2, wherein the photopolymerization initiator as Component (G) is used in a proportion of 0.1-10 parts by weight on the basis of 100 parts by weight of the resulting urethane acrylate oligomers.

Claim 14 (Original): A process for producing a UV-curable liquid polyurethane resin according to Claim 2, wherein the hindered phenol-based antioxidant as Component (H) is used in a proportion of 0.1-10 parts by weight on the basis of 100 parts by weight of the resulting urethane acrylate oligomers.

Claim 15 (Previously presented): A UV-curable liquid polyurethane resin having a viscosity (25°C) of 150,000-1,000,000 mPa·s, produced by the process according to Claim 1.

Claim 16 (Previously presented): A gasket molding material that comprises a UV-curable liquid polyurethane resin produced according to the process of Claim 15.

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Claim 17 (Previously presented): An HDD gasket molding material that comprises the gasket molding material of Claim 16.

Claim 18 (Previously presented): A method of applying a UV-curable liquid polyurethane resin produced according to the process of Claim 15 using an automatic coating robot.

Claim 19 (Previously presented): A process for producing a gasket which comprises coating the UV-curable liquid polyurethane resin of Claim 15 on a substrate at a temperature of 30°C to 80°C, followed by ultraviolet ray irradiation to cause curing reaction and by a high temperature treatment at 100°C to 180°C.

Claim 20 (Previously presented): A process for producing a UV-curable liquid polyurethane resin according to Claim 5, wherein the trifunctional alcohol as Component (B) is used in a proportion of 0.5-10 parts by weight on the basis of 100 parts by weight of the polycarbonatediol as Component (A).

Claim 21 (Previously presented): A process for producing a UV-curable liquid polyurethane resin according to Claim 7, wherein the diisocyanate as Component (C) is used in a proportion of 20-60

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parts by weight on the basis of 100 parts by weight of the polycarbonatediol as Component (A) and in NCO/OH equivalent ratio of 1.01-2.00.

Claim 22 (Previously presented): A process for producing a UV-curable liquid polyurethane resin according to Claim 7, wherein the diisocyanate as Component (C) is used in a proportion of 20-60 parts by weight on the basis of 100 parts by weight of the polycarbonatediol as Component (A) and in NCO/OH equivalent ratio of 1.01-2.00.

Claim 23 (Previously presented): A method of producing gasket according to Claim 16 using an automatic coating robot to apply the gasket molding material.

Claim 24 (Previously presented): A method of producing a HDD gasket according to Claim 17 using an automatic coating robot to apply the HDD gasket molding material.

Claim 25 (New): : A process for producing a UV-curable liquid polyurethane resin according to Claim 1, wherein the terminal (meth)acrylating reaction of the urethane oligomers is carried out after adding (G) a photopolymerization initiator, and (H) a hindered phenol-based antioxidant having a molecular weight of 500-2,000 is added thereto after the reaction is carried out.

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Claim 26 (New): A process for producing a UV-curable liquid polyurethane resin according to Claim 1, wherein the terminal (meth)acrylating reaction of the urethane oligomers is carried out after adding (H) a hindered phenol-based antioxidant having a molecular weight of 500-2,000, and (G) a photopolymerization initiator is added thereto after the reaction is carried out.